CHAPTER TWENTY-SEVEN

Coming to Terms with Communities of Practice

A Definition and Operational Criteria

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Over a decade ago, Jean Lave and Etienne Wenger (1991) published a highly influential book about communities of practice that has since spurred numerous efforts to harness the power of "community" to support learning. This has led to the development of many innovative learning environments that move beyond didactic pedagogical models in which there exists an all-knowing teacher-trainer, or instructional context, responsible for transmitting content to the isolated mind of some learner employee. From a practical standpoint, this movement is both valuable and consequential. However, from an intellectual standpoint and with the goal of advancing the science of what is known about supporting learning, there are few criteria for distinguishing between a *community* of learners and a *group* of individuals learning collaboratively.

Predicated on research in fields such as anthropology, education, and sociology, and on our own work as instructional designers, we adopt the definition of a community advanced by Barab, MaKinster, and Scheckler (2004): "A persistent, sustained social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise" (p. 55). Barab, Kling, and Gray (2004, p. 3) state in their introduction to an edited volume devoted to understanding communities in the service of learning that "[t]oo little of the education literature provides clear criteria for what does and does not constitute community; the term is too often employed as a slogan rather than as an

analytical category." It is the intention of this chapter to advance clear criteria that others can use in evaluating to what extent and in what manner a particular context constitutes "community" or, to adopt the term advanced by Lave and Wenger (1991), a *community of practice* (CoP).

Central to the work of Lave and Wenger is the concept that learning stems from meaningful or legitimate participation by individual learners or employees as part of the community as a whole. Furthermore, there is a history of knowledge that is embraced and learned by new members through their *legitimate* participation in the completion of meaningful shared goals. For instance, in a business environment, a certified performance technologist (CPT) may be asked to determine if a community exists in a dysfunctional sales department. If a community exists, then older, established sales representatives and managers can be expected to have experiences and understandings that have evolved from one generation of salespeople to the next since the inception of the department. Sometimes the knowledge is reified as company documents that elucidate rules of behavior for interacting with clients and other professionals. In other instances, it comes in the form of nonreified, tacit knowledge that is learned by new employees in the form of verbal warnings, guidelines, or other communicated understandings and practices that allow new members of the salesforce to interact and participate in meaningful ways to complete sales tasks and goals.

Just what a community is and which characteristics of the community as well as of one's participation in a community are relevant to the learning process are unclear. Such clarity is exactly what is needed for those interested in designing or using something like community to support learning and to improve performance. In a human performance technology (HPT) setting, this may mean that the CPT must be able to identify the presence of an existing community through the incidence of particular criteria. If no community is detected in a particular group or department through observational techniques, interviews, or other research methods, such criteria should guide the CPT as he or she works to design structures to support the use, development, or emergence of a community. However, without guidelines for what communities of practice are and which characteristics of community contribute most to the organization's performance and learning, the CPT has no place from which to begin.

Clearly, *community* is a complex term and one that resists a single particular definition or meaning. In advancing this characterization and resultant criteria, we do not claim that it is possible to have some invariant structure that must be applied and is relevant to each actualization of community. There are likely groups that do not fit the earlier definition but are, upon direct observation, communities. Even with this appreciation, it is our belief that the concept of "community" can be useful for analytical work when studying corporate groups. Furthermore, to benefit the goal of scientific advancement, it is

necessary that we as a field develop a shared appreciation and common meaning for terms that we are individually and collectively using to describe learning and practice environments. Without such a shared interpretation it becomes difficult to discuss meanings across projects or even to characterize the significance of a term within one's own project.

The intent of this chapter is to ground the concept of a community in the literature related to social-psychological constructs, how people learn, and performance improvement, while explaining why a community may be important in the context of performance improvement and assessment. Furthermore, we draw on the earlier definition to advance six criteria with respect to analyzing to what extent and in what manner a CoP is present: (1) a common practice and shared enterprise; (2) opportunities for interaction and participation; (3) mutual interdependence; (4) overlapping histories, practices, and understandings among members; (5) mechanisms for reproduction; and (6) respect for diverse perspectives and minority views. Finally, we provide practical information regarding the evolution of such communities and suggestions for anyone wishing to promote communities of practice.

WHY BOTHER WITH A CoP?

Stemming from the work of anthropologists, there is a long social-theoretical history of the concept of community that has informed the work of studying community development in sociology and education research. This history often focuses on village-scale communities in which kinship was a basic organizing element. However, more recent work has centered on the shared purpose and practices of professional work groups or organizations and does much to inform the study of community in business and human performance settings. The latter was the original focus of Lave and Wenger (1991), who coined the term *community of practice* as a means of communicating the importance of activity in binding individuals to communities and of communities to legitimizing individual practices.

It is this line of thinking that led to Lave and Wenger's (1991) discussion of *legitimate peripheral participation,* in which the primary motivation for learning involves participating in authentic activities and creating an identity that moves one toward becoming more centripetal to a CoP. In reflecting on their examination of four different communities, they stated

> [Community does not] imply necessarily co-presence, a well-defined identifiable group, or socially visible boundaries. It does imply participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities [1991, p. 98].

While this work has proven useful, human performance designers and technologists interested in creating something like community to support learning are still in need of guideposts or criteria that they can use to help guide the community-related design processes.

Theoretical, Practical, and Psychological Underpinnings of Communities of Practice

Over the past two decades there has been a shift in the learning literature from a cognitive view of mind and learning that emphasizes individual thinkers and their isolated minds to a more *situated* perspective that acknowledges the role of the physical and social context in determining what is known, thus emphasizing the social nature of cognition and meaning (Brown, Collins, and Duguid, 1989; Greeno, 1998; Resnick, 1987). A core assumption underlying the situated perspective is an appreciation for the reciprocal character of the interaction in which identities, as well as cognition and meaning, are considered to be socially and culturally constructed (Barab and Duffy, 2000; Lave and Wenger, 1991). Lave (1993) advanced the belief that "developing an identity as a member of a community and becoming knowledgeably skillful are part of the same process, with the former motivating, shaping, and giving meaning to the latter, which it subsumes" (p. 65). As described by Wenger (1998), it is within the interaction that practice, meaning, identity, and community emerge and evolve, all of which interactively constitute context (see Figure 27.1). The focus in terms of learning is on facilitating engaged *participation,* not simply knowledge *acquisition.*

An important point about Wenger's conceptualization is that one could replace learning with the content of any other circle and the overall diagram would not lose its meaning. This social view of learning involves whole persons

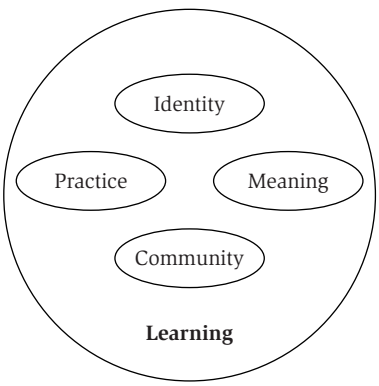

Figure 27.1. Dialectical Relations Central to the Learning Process.

in social contexts, and is a process of constructing practice, meaning, and identity all in relation to a CoP (Barab and Duffy, 2000; Lave, 1993, 1997; Walkerdine, 1997; Wenger, 1998). Such a framework offers a radically different notion of the process of learning, one that we believe offers a powerful framework for the HPT community. Of crucial importance are the interrelations among community, practice, meaning, and identity; making learning and practice not just jobs but an integral part of who one is as a person.

Knowledge Conceptualization

Cook and Brown (1999) stated that there are four relevant forms of knowledge: explicit, tacit, individual, and group. Traditionally, an "epistemology of possession," the dominant paradigm in the organizational literature, tends to focus on individual explicit knowledge and treats it as something people *possess.* Although this epistemology can also include forms of tacit and group knowledge, these forms of knowledge are seen as second level. In the traditional paradigm, if there is such a thing as implicit or group knowledge, what matters is how we make it explicit so it can be "possessed" by the individual (Nonaka, 1994). When expanding our view of knowledge to include an "epistemology of practice" (Cook and Brown, 1999), along with adding "knowing," tacit and group knowledge become distinct and equally important forms of knowledge for the life of a community. There is a tacit knowledge that is part of the action and there is group knowledge that is part of the group practice and does not "belong" to any specific individual. Both are forms of group and tacit knowledge that cannot be possessed and transmitted in the traditional sense. It is participation within a CoP that eventually brings newcomers to those forms of knowing.

Knowledge and knowing depend on each other and are mutually enabling; according to Cook and Brown (1999, p. 381) "knowledge is a tool of knowing" that we use as we interact with the social and physical world. It is in the interaction of knowledge and knowing that groups can generate new knowledge and ways of knowing. This interaction is what Cook and Brown (1999, p. 383) have called "the generative dance between knowledge and knowing," a dance that can be a great source of organizational change and innovation, and for which a CoP can be a fruitful environment. At the same time, this process is essential to the life of a CoP, its definition and reproduction cycles are based on this generative dance, and newcomers become old-timers as they learn to participate in them (Barab and Duffy, 2000).

Benefits of a CoP

Communities of practice may exist all around us in a corporate setting, but what are the benefits of encouraging, supporting, or spurring their growth and development? How will a business, the members of an existing CoP, or

individuals not currently part of a CoP increase their overall performance as a result of promoting these organizations?

Hubert Saint-Onge and Debra Wallace (2003, p. 4) identify three major strategic challenges that companies confront today: "(1) escaping the limits of performance to keep growing at an accelerated pace, (2) applying knowledge in different ways, in multiple places, across the organization to constantly innovate, and (3) building an environment where learning is the norm to acquire capabilities at a faster rate." Wenger, McDermott, and Snyder (2002, p. 14) note that communities of practice have a number of benefits for organizations, such as

- Connecting local experts and isolated professionals
- Diagnosing and addressing business problems that are organizationwide
- Analyzing knowledge-related sources of uneven performance across the organization to bring all units to the standard of the highest-performing unit by determining best practices
- Linking and coordinating previously disconnected activities that deal with comparable knowledge domains

In a business economy that values knowledge as the key to achieving success, these communities allow for improved access to and sharing of tacit knowledge as well as explicit knowledge that employees hold about best practices while adding short- and long-term tangible and intangible value to the whole organization. Short-term, tangible value includes improved, more rapid solutions to immediate problems, reduced development times, and increased innovation. Over the longer term, improved problem-solving skills; stronger trust relationships across the organization; and sense of ownership of product, practices, and community have tangible and intangible benefits that will improve the organization for the unforeseeable future.

The presence and encouragement of well-functioning communities of practice might hold a number of other advantages for any company, especially those organizations primarily reliant upon knowledge development, management, and sharing. Etienne Wenger and William Snyder (2000) state that communities of practice "can drive strategy, generate new lines of business, solve problems, promote the spread of best practices, develop people's professional skills, and help companies recruit and retain talent" (p. 140). The question remains: How can a CoP do this?

Driving Strategy and Spreading Best Practices. The structure of a CoP places the responsibility for developing new strategies for improving performance on the shoulders of those who are responsible for implementing innovative practices. By encouraging or implementing communication structures and technologies that allow for improved knowledge sharing among practitioners, teams, and

departments, employees in the trenches share their daily concerns, problems, and solutions with one another, resulting in best practices being adopted. If the communication structures are implemented in such a way that management is also in the communication loop with practitioners, the best practices should also spread beyond the immediate community. This may occur through forums such as business roundtables, meetings with other corporate executives, or other managerial communities of practice and noncommunity-oriented groups (Saint-Onge and Wallace, 2003; Wenger and Snyder, 2000; Wenger, McDermott, and Snyder, 2002).

Developing Professional Skills, Recruiting, and Retaining Talent. Recognition of employees' "best practices" by management also allows for the support of employee learning, as those responsible for tailoring professional development programs select or develop learning experiences that support best practices while encouraging communication among practitioners that allows for peer support and further innovation. From a financial standpoint, much money is wasted on faddish, massive professional development programs that are based on what a manager or CPT perceives as what the employees need to be more effective. With the existence of a well-functioning, highly communicative CoP, employee practitioners identify and express what kinds of learning programs and initiatives would be of most benefit to their daily work. In addition, the existence of a CoP may also allow for the identification of employees with specialized knowledge and skills who should be singled out for leading and developing learning activities, encouraging the development of cohesive structures in fledgling communities, or communicating with senior management regarding the needs of practitioners.

Building Relationships and a Sense of Connection. The mentoring and peer support provided by a CoP as new and talented employees enter the company are expected to provide these new hires with a sense of belonging and identity that help combat possible feelings of isolation and lack of connection to the collected, tacit, and explicit knowledge held by veteran employees. In organizations without this sense of community, this sense of alienation often leads to the premature resignations of well-intentioned brilliant employees with innovative ideas who feel that they may be supported more effectively elsewhere. Whether recognition of individual achievement and innovation comes from management or peers, its effect can be substantial and powerful for employees, and a CoP is an excellent forum for both forms of recognition.

In addition to those advantages suggested by Wenger and Snyder (2000), Verna Allee (2000) notes a number of benefits, as presented in Figure 27.2. We see these benefits, in addition to those mentioned earlier, as highlighting the potential value of designing for a CoP.

For Business

- Helps drive strategy
- Supports faster problem solving both locally and across the corporation
- Aids in developing, recruiting, and retaining talent
- Builds core capabilities and knowledge competencies
- More rapidly diffuses practices for operational excellence
- Cross-fertilizes ideas and increases opportunities for innovation

For the Community

- Helps build common language, methods, and models around specific competencies
- Embeds knowledge and expertise in a larger population
- Aids in the retention of knowledge when employees leave the company
- Increases access to expertise across the company
- Provides a means to share power and influence with the formal parts of the organization

For the Individual

- Helps people do their jobs
- Provides a stable sense of community with other internal leagues and with the company
- Fosters a learning-focused sense of identity
- Helps develop individual skills and competencies
- Helps a knowledge worker stay current
- Provides challenges and opportunities to contribute

Figure 27.2. Benefits of Communities of Practice.

COMMUNITIES OF PRACTICE: SIX CHARACTERISTICS

Considering the potential benefits of communities of practice for the organization, it becomes relevant for any CoP-related intervention to be able to analyze to what extent and in what manner a CoP is present in the organization before and after the intervention. The following characteristics are based on an examination of the literature, emergent understandings from a number of community-based research projects, and from our diverse set of experiences as participants in corporate and educational communities both on-line and face-to-face. Following each explanation of these six central aspects of CoP, we provide three statements, that is, criteria, that operationally define each aspect. These criteria can be used to better understand the extent to which a particular context embodies one of the six characteristics of a CoP. Taken as a whole,

these six characteristics and eighteen criteria can be used to illuminate the extent to which a particular group has those aspects associated with a CoP. These criteria are by no means intended to guide a CoP design. As will be stressed in the next section of the chapter, as communities of practice emerge, we can support or encourage them, we can design "for" them, but we cannot design them.

A Common Practice and Shared Enterprise

Political sociologist Robert Bellah and his colleagues originally conceived of a community as "a group of people who are socially interdependent, who participate together in discussion and decision making, and who share certain practices that both define the community and are nurtured by it" (Bellah, Madson, Sullivan, Swidler, and Tipton, 1985, p. 333). This common practice or mutual enterprise is what binds the community as something larger than the individual. The extent to which someone is or is not a member is dependent on the person's overlap with this common core. Furthermore, such overlap legitimizes the practices of the larger community. Various practices are meaningful or legitimate to the extent that they are associated with and advance the core enterprise of the community.

For example, the sales department in a corporation mentioned earlier will have several practices or activities that most or all members of the team are engaged in, such as developing sales plans; communicating with clients; interacting with other members of the sales team; reading professional literature; participating in team and client meetings; interacting with members of the marketing, finance, contract, and engineering departments; and preparing periodic reports for management. Not all members may be required to participate in all of these practices or activities, but there will be common practices that overlap for members of the sales team, and identifying such overlaps will be an important task for the CPT when determining whether there is a CoP.

The presence of such overlapping practices and activities is a necessary but not sufficient condition for the presence of CoP. Lave and Wenger (1991) posit that learners participate as part of a community of practitioners in their movement from newcomers to full participation in that movement and not only in the overlapping practices that are unique to a CoP. Barab, Kling, and Gray (2004) broadly categorize practitioners as those with a common practice or mutual enterprise. Limiting participants in a CoP only to those that have a similar career or occupation would necessarily exclude a great number of potential communities of practice that may share a common enterprise, for example, contract negotiators, marketing team members, or special interest groups. We acknowledge both common practices and mutual enterprises as having the potential to unite a group, and view professional organizations, corporate teams, or groups with an overlapping cause as *possibly* constituting a community.

We have established three characteristics of a common practice or shared enterprise that can be used to assess the degree to which a community has an observable common practice or shared enterprise. The three guiding or evaluative criteria are

- The group exhibits observable activities and interactions that reflect common practices or mutual enterprises.
- Group members identify themselves as sharing common practices or mutual enterprises.
- The group has produced artifacts that detail common practices or mutual enterprises.

Opportunities for Interaction and Participation

Because activity and participation are at the core of the idea of a CoP (Barab and Duffy, 2000; Lave and Wenger, 1991), it seems evident that providing opportunities for interactivity, as in "acting" with others, and participation is essential to any CoP and environment designed to support a CoP in the service of learning. Unless there are tools and opportunities to share the mutually defined practices, beliefs, and understandings, that common pursuit of a shared enterprise is not possible. It is important to emphasize that the need for a CoP to provide opportunities for interaction and participation not only refers to the tools and channels that can support participation and interaction among them, but also, and first of all, refers to the real and meaningful social opportunities to interact and participate.

As designers and not simply anthropologists, we are interested in designed structures for supporting communities and at the same time acknowledging that communities are more than any set of technical structures. Kling (2000) introduced the term "socio-technical interaction networks (STIN)," which focuses on both the social and technical aspects and on how they interact. The STIN framework stresses that it is technology in use, and not just the tool, in the context of the social world that is important. Similarly, Barab, MaKinster, and Scheckler (2004) point out that in designing community it is the human-to-human interaction as mediated by computer interactions, and not human-to-computer interaction, that is a challenge in designing for communities. In this sense, when examining designed communities one should not overly focus on the most obvious pieces of the on-line or other tool-mediated aspects of the community such as Websites, lists, forums, meetings, bulletin boards, manuals, and so on, but on how those tools are providing support for real interaction and participation; on how they are actually being used and not just on the theoretical potential they have. This criterion goes beyond usability issues and focuses on sociability issues (Preece, 2000). This is not to say that usability is not relevant, but that it is only one aspect, and that it should be

measured in the context of sociability and participation. The three guiding or evaluative criteria for opportunities for interaction and participation are

- The context provides meaningful opportunities for social, that is, human-to-human, interaction in which "newcomers" and "old-timers" are in fact engaged.
- The context provides opportunities for "newcomers" and "old-timers" to meaningfully participate.
- The interaction and participation opportunities are structured in a way that directly refers to the common practice of the group.

Mutual Interdependence

Communities are more than a collection of individuals; through interconnections between context, processes, or resources individuals can become a part of something larger, which helps provide a sense of shared purpose as well as an identity for the individual and the larger community (Barab and Duffy, 2000). Communities, whether face-to-face or on-line, are drawn together through the principles of "commonality" and "interdependence." Commonality involves a process of working together in common areas and interests and, in the process, forming a bond or identity with one another and with the group as a whole. Interdependence implies depending on one another for information, knowledge organization, or shared problem solving. A desirable feature of a CoP is that varying demands and expertise exist at different levels of competency where participants can scaffold one another through the sharing of information and abilities. It is mutual interdependence that defines community, not hierarchy.

It is not simply the community members who are a part of something larger. The community itself functions within a broader societal role that gives it, and the practices of the community members, meaning and purpose. If the community isolates itself from the societal systems of which it is a part, then both the individuals and the community become weaker. "This interdependent perspective prevents communities, from small families to nations, from becoming worlds unto themselves" (Shaffer and Anundsen, 1993, p. 12). This interdependent perspective also prevents individuals from becoming worlds unto themselves. With each newly appropriated practice, individuals become more central to and constitutive of the community and in a fundamental way develop a self that is partly constituted by their participation and membership in the CoP. The three guiding or evaluative criteria for mutual interdependence are

- The group includes members who have diverse expertise and knowledge.
- Members depend on one another for participation, shared problem solving, and completion of group tasks.
- The group functions within a broader societal role that gives it, and the practices of the group members, meaning and purpose.

Overlapping Histories, Practices, and Understandings among Members

Communities are more than the simple coming together of people for a particular moment in response to a specific need or for a class. Successful communities have an overlapping cultural and historical heritage that, in part, captures their socially negotiated meanings. This includes shared goals, understandings, and practices. These overlapping meanings, while being continually negotiated anew, are also inherited from previous community members' experiences in which they were hypothesized, tested, practiced, and socially agreed upon. "The negotiation of meaning is a productive process, but negotiating meaning is not constructing it from scratch. Meaning is not pre-existing, but neither is it simply made up. Negotiated meaning is at once historical and dynamic, contextual and unique" (Wenger, 1998, p. 54). The learner has access to and functions in the context of this history of previous negotiations as well as responsiveness from the current context on the functional value of a particular meaning.

One of the important benefits of functioning as part of a community is that through this heritage the practices and understandings are viewed as legitimate. When taught using a traditional instructional context, rules and behavior expectations can feel arbitrary, artificial, and even unnecessary. However, when one learns through participation in the community over time, these norms and understandings are a natural and legitimate part of one's participation. Through meaningful contributions to and valuing of the community histories, practices, and understandings, individuals become legitimate members of the community. In fact, being knowledgeable and skillful becomes intertwined with community membership and the development of one's self. Members develop this sense of self through engagement in the socially agreed upon discourse and practices of the community and in the context of the values of that community, as they become members of the community (Bereiter, 1994, 1997). Three guiding or evaluative criteria for assessing the presence of overlapping histories, practices, and understandings among members are

- There are mechanisms for the development of new, socially agreed upon goals, practices, and understandings.
- There is a core knowledge base that defines what practices and meanings are associated with the group.
- Members of the group know each other or about each other, and about those contributions that other members have made.

Mechanisms for Reproduction

A community is constantly reproducing itself so that new members contribute, support, and eventually lead the community into the future, but do so in the context of the existing agreed upon practices, goals, and understandings. In this

manner, communities are continually replicating themselves with new members moving from peripheral participant to core member through a process of enculturation (Lave and Wenger, 1991). Reproducibility, in which newcomers are able to become central to and expand the community, is essential if the community is to have an overlapping cultural heritage. It is a process that is continually occurring in all communities of practice. Simply consider the experiences of most corporations: new hires apprentice with more seasoned employees, working closely at their elbows. Eventually, they begin to appropriate the company practices, and they move from the position of apprentice to more experienced employee, but they are still very much dependent on the codified knowledge of the company as displayed in books and manuals.

Over time, newcomers learn the more informal "stories" of the company and begin to develop their own experiences that give nuance to company policies and more formal processes. Eventually, they must fill the role of "old-timers," and they enter a new level of learning. They begin to expand the thinking of the community of which they are a part (Cook and Brown, 1999). They come to mentor junior hires in the ways of the company. They continue to learn this process and, perhaps more important, grow more confident in their contributions to the company and in their sense of self with respect to their jobs. During this process, they appropriate and contribute to the negotiation and reification of meanings. It is through this cycle that a CoP and the individuals that constitute the community reproduce and define themselves. It is also these reproduction cycles that define learning and participation as well as one's place in the company hierarchy. Any discussion of participation and learning within a CoP must consider the individual's position with respect to the corporate trajectory of the social and power structures of that community. Assumedly, and ignoring other sociopolitical obstacles, it is one's position in relation to the community trajectory from novice to expert that defines a particular member's ability with respect to community practices (Barab and Duffy, 2000). We have established three characteristics to help assess when a community has the mechanisms for reproduction typical of a CoP:

- The group contains both newcomers and more experienced experts.
- The group has a history that has continued beyond the completion of a particular problem or task.
- The group passes through multiple cycles, with newcomers becoming old-timers.

Respect for Diverse Perspectives and Minority Views

There is much evidence that has urged us to confront negative attitudes and adverse behaviors toward minorities by a dominant group in a community's practice. Bennett (1995) has suggested that "despite the fact that we live in a polycultural society, most of our schools remain monocultural" (p. 77).

Furthermore, he warned that the ignorance of cultural attributes runs the risk of misinterpreting "differences in modes of communication, participation, and world view," which are vital for academic and social success (p. 77). To build a healthy CoP, it is important that the design *for* the CoP reflect the rich cultural diversity of the community's population and increase an equal communication among members with various histories, interests, priorities, and concerns. Diversity creates opportunities for character development by teaching tolerance and respect for people and by encouraging concern for equity. A culturally diverse coalition that values and nurtures people from all backgrounds is worthy of active participation. Scholars and practitioners have demonstrated how culture and national values shape the construction of identity within the community, and have suggested setting up ethical standards for involvement of on-line discussion boards (Flicker, Haans, and Skinner, 2004), building on-line learning from an international perspective (McIsaac and Gunawardena, 1996), and incorporating mixed communication systems to increase the contact and understanding among different groups (Etzioni and Etzioni, 1999).

In our efforts to characterize communities of practice, an emphasis is placed on respect for diverse perspectives and minority views. Healthy community functioning should increase an awareness of the cultural diversity of the coalition in a community and thus create an environment that helps the members to understand all its dimensions and make a commitment to nurture cultural diversity. One can think about this characteristic in terms of respect, diversity, and acceptance of minority views. Respect could be demonstrated by the politeness a member shows when he or she challenges a perspective, or by the tolerance a member displays toward an opposite point of view, or by a member's readiness to accept an innovative viewpoint. Diversity is defined in terms of individual differences that play an important role in the culture and operation of organizations. The dimensions of diversity include age; educational background; ethnicity; race; social class; religion; and national, regional, or other geographic differences of origin. Minority views refer to the perspectives that are held by members whose cultures are underrepresented in the group, a challenge to a dominant perspective, or an innovative view that has not been normally accepted. The guiding or evaluative criteria for respect for diverse perspectives and minority views are

- The environment provides even and fair opportunities for members from different backgrounds to participate in and make contributions to the group practice.
- Members show politeness toward diverse and minority perspectives in the group.
- Members are satisfied that their individual perspectives have been fully understood and respected.

THE EMERGENCE OF A CoP

Throughout this chapter we have adopted a cautious vocabulary when referring to the ability to create a CoP. The essence of a CoP is that it emerges from among those who share a common practice. At the essence of a CoP, there are core characteristics that cannot be artifacts created by a design or intervention team. They are instead existing characteristics of human groups that may be expanded and supported in order to generate environments that are intended to foster learning in the context of communities of practice.

We cannot, using design techniques, create mutual interdependence, overlapping histories, or shared understandings. Much of the time, we will be in a situation in which we "design for" a CoP and do not "design" a CoP. Therefore, many of the essential characteristics of a CoP will be present, at least implicitly, in the human groups with which we work. In this context, any design and intervention effort becomes an attempt to stimulate the existence of essential CoP characteristics in an already existing group and expand them to promote learning and improved performance. Often, the goal will be to create the tools and foster the environments that promote the existence and preservation of an existing, perhaps incipient CoP. One cannot create a CoP unless there is an existing group of individuals who already share a practice. What matters is how that existing context can be used in the service of learning and performance improvement.

For Lave and Wenger (1991), participation in a CoP *is* learning, especially for newcomers, in the form of legitimate peripheral participation. The challenge then becomes to support the emergence or expansion of communities by developing the necessary scaffolds that will support members in participating in the movement along the communal trajectories. It is in this path that we can move from traditional practice fields to communities of practice (Barab and Duffy, 2000). In this sense, if the conditions are present, the CoP approach to learning could be used both as an effective intervention and as a more holistic organizational approach. It will depend on the context and the needs of the organization. As Schwen and Hara (2004, p. 164) have clearly stated, communities of practice are about "learning as a living experience of negotiating meaning—not about form. In this sense, they cannot be legislated into existence or defined by decree. They can be recognized, supported, encouraged, and nurtured, but they are not designable reified units."

Promoting a CoP

There are two general orientations to the development of a CoP, though from a theoretical standpoint, it has been argued that there is only one that allows for natural evolution of a real community. The first is a bottom-up approach in which the facilitator works to encourage the evolution and communicative

strength of an *existing* fledgling CoP that is at a stage in which it may flourish, falter, or dissipate, depending on the depth of the need for a problem solution and the communication of the practitioners involved. This approach is by far the most common and is considered by many theorists and CPTs to be the only approach that allows for the development of a cohesive and beneficial community that allows for employee-participant ownership rather than management-mandated attendance (Saint-Onge and Wallace, 2003; Wenger, McDermott, and Snyder, 2002). Leadership in a bottom-up approach comes from the naturally emergent coordinators who are respected by the group, and innovation may come from any participant.

The second approach, from the top down, is initiated by and based on the *perceived needs* of practitioners, as elicited by needs analyses conducted by a CPT, or by the expressed wishes of management. It has been argued that this approach results in more difficulty in yielding a community because the levels of trust among participants may not evolve due to fear of reprisal by manager-initiators if concerns and ideas expressed are met with resistance (Barab, Kling, and Gray, 2004; Saint-Onge and Wallace, 2003; Wenger, 1998; Wenger, McDermott, and Snyder, 2002). This may stymie innovation and limit the possible benefits of any community. Furthermore, members of the group may never develop a sense of ownership, as they may view the group as being owned or driven by management, which will further limit the possible advantages expected from developing a CoP or CoP-like group (Schwen and Hara 2004).

Each approach is detailed further in the following sections. Regardless of the approach, the important point is that communities of practice are living entities and must be allowed to grow over time. While there have been a number of models that have been put forth to describe this growth trajectory, one of the most relevant for this community is that posed by Wenger, McDermott, and Snyder (2002) (see Table 27.1). In their model, a CoP passes through five stages: potential, coalescing, maturing, stewardship, and transformation. These stages begin with a group of common needs, identifying their overlap to a full-fledged community with most of the six characteristics described earlier.

Bottom-Up Development: Emergent and Designed. Wenger, McDermott, and Snyder (2002) use a gardening metaphor to illustrate that a CoP cannot be forced but can be cultivated like a garden. In this garden, the seeds are already planted in the form of shared individual needs and overlapping practice. The CPT's role is to provide the necessary support—in the garden, water, food, and sunlight. A CoP cannot be managed as project teams and other more traditional work units are managed because an overly strong hand can easily take the sense of ownership and cohesion away from the practitioners. This kind of development *encourages* the emergence of community due to a group's shared sense

Table 27.1. Five-Stage Developmental Model for Communities of Practice.

Stage	*Description*
Potential	Employees with similar problems and needs identify each other and contemplate the formation of a community for support.
Coalescing	The community begins to take shape through shared activities and practices intended to meet the needs of community members.
Maturing	Members plan directional strategy, set standards, and participate in joint activities. Members now value the community. The overall focus and role of the CoP solidifies.
Stewardship (formerly *Active*)	The community begins to plateau. The core membership (old-timers) begins to decline as legitimate peripheral participants move to more central roles. This may occur due to natural changes in focus and membership of the CoP or realignment of values.
Transformation (formerly *Dispersion*)	Members start to leave the community once its use or values no longer align with their own. New members join and the process either begins again or the community disperses.

Source: Adapted from Wenger, McDermott, and Snyder, 2002.

of need, rather than *forcing* individuals to associate due to management's perception that a need exists.

While there is no one way to develop a CoP, Wenger, McDermott, and Snyder (2002) suggest several design principles that should be kept in mind as one works to foster a nascent community.

1. Design for evolution.
2. Open a dialogue between inside and outside perspectives.
3. Invite different levels of participation.
4. Develop both public and private community spaces.
5. Focus on value.
6. Combine familiarity and excitement.
7. Create a rhythm for the community.

These principles each act as reminders that the facilitator has a number of different roles when working to promote a CoP. Possible roles include the following:

- *Mind reader:* You will be expected to anticipate the future needs of the community related to communication and reification of best practices as it grows.
- *Operator:* This role entails maintenance and improvement of the channels of communication among members as well as nonmembers.
- *Cheerleader:* The job here is to encourage and implement strategies and structures that allow for participation in community activities regardless of the centrality of membership of an individual.
- *Organizer:* Work with building managers for adequate space and time for community members to interact and communicate in a comfortable fashion.
- *Assessor:* Determine whether the community activities are yielding sufficient gains for the individuals, community, and company. If not, adjust your strategies and tactics to improve community results.
- *Magician:* Make the community members feel a sense of enjoyment about what they do without taking them too far out of their comfort zone. Make them aware when their group contribution makes a big difference.
- *Conductor:* Provide a sense of connection to a familiar pattern of interacting with one another that allows the community members to know what to expect in terms of their interactions with each other on a daily basis.

Top-Down Development: Created and Designed. If the impetus for creating and designing a CoP where one does not currently exist comes from management or a CPT, it requires a rapid relinquishing of power and ownership as the roles of leader and participant are transferred to group members. Again, the metaphor of the garden is appropriate; one should not force the group to work together too much early on, as this is likely to give them too much exposure to sunlight and might result in burnout. If the members are given too few chances to interact, the community will die off due to a lack of its key nutrient, interaction. The goal here is to facilitate and encourage communication that the individuals will likely make if given the opportunity. In addition, the same principles and roles discussed for the bottom-up approach should be used to encourage the formation of a CoP in the top-down approach.

Lingering Questions about Communities of Practice

For a CPT, there are a number of questions that crop up regarding communities of practice. How will you know when to facilitate a CoP? What types of problems, new business initiatives, or quality-improvement goals would tip us off to go

with a CoP? What elements must be in place that will allow for the design of support mechanisms that will allow for the emergence of a CoP? How is it done in an organization and by whom? None of these questions has simple answers, but there are some guidelines that may provide direction.

What Does the Legitimate Peripheral Participation (LPP) Cycle Look Like in Practice? Let us consider the example of a newly hired contract negotiator at a medium-size large-truck transmission producer who we will call Susan. Susan enters a workplace in which there are already fledgling communities of practitioner—negotiators who have explicit knowledge and practices reified in manuals as well as strong stores of tacit knowledge and best practices that have been in place for some time. The manager, Peter, introduces Susan to Project Team 9, which consists of Mark, Therese, and their leader, Tom. Mark was hired about a month earlier, Therese has been in the company for about a year, and Tom has been a negotiator with the firm for nearly five years.

Tom informs Susan of a number of best practices that the team engages in that may be different from those of other groups. Over the course of the next few weeks, legitimate peripheral participants Susan and Mark encounter a number of situations that are unfamiliar and discuss strategies and solutions with core old-timers Therese and Tom, who convey a large amount of additional information about best practices and solutions. This allows for improvement of the team's performance in the next set of negotiations and causes a rethinking of the group's conception of best practices.

A few months later, Tom is given a promotion and moved to another division, Mark is made leader of another team, while Therese is made leader of Team 9. Two new hires, Jack and Martha, are brought on the team within a few weeks of one another. Jack and Martha become legitimate peripheral participants while Susan and Mark move toward being more core members and share their tacit knowledge of best practices with Jack and Martha as the need arises to solve problems. This is a limited, simple example of the cycle a CoP may go through, and most communities of practice are much larger than this example. However, it does paint the picture of the movement of members from LPP to core participants over time.

When Should I Facilitate a CoP? The answer to this question begins with an examination of the goals and needs of the organization. Does the organization have as its goals the increase of its knowledge-management and acquisition capabilities? Is the company working to overcome limitations in performance that prevent it from rapid growth and capitalization (Saint-Onge and Wallace, 2003)? Is innovation a key strategy used to advance the worth of its products, knowledge base, and everyday practices? Is learning new skills and information at the heart of the needs of the corporation? If the answer to any of

these questions is affirmative, a CoP may be beneficial for meeting the organization's goals and needs.

Who Should Lead a CoP Initiative? Leadership may come from any level in the organization, whether it is the CPT attempting to improve performance at the behest of management, a manager perceiving a need for improved communication and cohesion among employees, or leaders of an existing and fledgling community. What determines this is who the community is willing or able to work with on a daily basis. In many instances, it is important that the leader not be someone whom community or group members find threatening, inflexible, or overly powerful, as they may be unwilling to participate due to feelings that their positions may be threatened if they speak up or suggest innovations.

Warnings and Cautions: What Experience Tells Us about Working with Communities of Practice

The fact that a CoP cannot be created, only "recognized, supported, encouraged, and nurtured" (Schwen and Hara, 2004, p. 164) makes it necessary to offer some cautions and warnings to be considered when working with or for a CoP. Drawing from their experiences and the literature, Schwen and Hara present specific cases of failed communities of practice, including a high-technology company, consulting firms, and legal firms. Schwen and Hara (2004) have pointed out five cautionary notes about working with a CoP. Although their effort refers especially to on-line communities and their support tools, their work is equally valid for other forms of community. We summarize their contributions and offer some realistic perspectives to remind the reader that working with a CoP is challenging, just as it is with any "living" entity.

Prescriptive Versus Descriptive. This common distinction in the instructional design literature is very valuable in this context. Lave and Wenger's (1991) original formulation about communities of practice was essentially descriptive, and therefore cannot be viewed as a prescription for the design of a CoP. To understand how a CoP works does not allow us to predict how a community will work if designed or facilitated to become a CoP. This does not mean that we cannot use this knowledge to guide our efforts to support, encourage, and nurture a CoP. In addition, we can use the principles and the characteristics presented in the previous section of this chapter to evaluate the effectiveness of existing CoP-related efforts.

Ready-Made Versus Communities-in-the-Making. CoP theory and situated cognition in general are most useful when working with an existing community. Experiences related to and the literature regarding the design of communities

of practice from the ground up are limited. We hope this chapter to be our small contribution in this regard. In this sense, what is known about the more advanced development stages may not necessarily be useful for early stages of CoP development. Therefore, designers should use great caution and judgment when deciding to move forward with the design of a community.

Knowledge of Possession Versus Knowing in Practice. This theoretical distinction made earlier in this chapter is also to be taken as a cautionary note. Communities of practice are essentially centered on participation and knowledge-in-action or knowing rather than transmissible declarative knowledge. It should therefore be at the core of design efforts intended to support communities of practice.

Mid-Level Social Theory Versus Micro Learning Theory. Communities of practice as a situated cognition theory is at middle level as a social theory. It does not provide a specific pedagogy, and it is not a methodology to be followed. Additionally, combining a mid-level theory such as communities of practice with a specific micro learning theory, such as a specific educational method, may not produce the expected results. For example, emphasis on a detailed curriculum, extensive learning objectives, and knowledge objects may reveal a focus on a traditional method that is not necessarily supported in a CoP environment. It may at the same time show a focus on knowledge of possession.

Motivated Members Versus Unwilling Subjects. When working with a CoP, it is essential to focus on the authentic motivation of its members. They should not be viewed as the "subject" of an intervention. CoP members' intentions should always be considered as essential in any design effort. The work of the design team should not mean a loss of decision power for the participants. However, this is often not the case in CoP initiatives. Community members' intentions and needs are sometimes threatened or not considered, which subverts the social foundation of the CoP.

CONCLUSION

The CoP perspective suggests a reformulation of what it means to know and learn, from a dualist representational theory separating knowing from that which is known to one that pairs practice and meaning within context. This then suggests dialectic, as opposed to dualistic, relations among practice, meaning, context, and identity. The term *community of practice,* advanced by Lave and Wenger (1991), was introduced to capture the importance of activity in fusing individuals to

communities and of communities in legitimizing individual practices. In their work, learning is conceived as a trajectory in which learners move from *legitimate peripheral participant* to *core participant* in the CoP. This work has garnered the interest of many human-performance and educational efforts. Nevertheless, all those interested in developing and examining a CoP, including on-line communities and especially instructional designers and human performance technologists interested in creating or using existing communities to support learning, need guideposts or criteria to guide their design and evaluation process.

We hope it has become evident throughout this chapter that the context in which the CoP grows is critical. Success depends less on any one technical structure and more on the potential for human-to-human interaction. In this sense, it will be the product, scaffold, or technology *in use,* not just the tool, that is critical to the potential success of a particular CoP. We have discussed some of the in-use characteristics that distinguish a community of learners and a group of individuals learning collaboratively. Even though having this set of guideposts or design criteria for a CoP is a step forward, from a performance-improvement perspective there is still the need to learn more about when it makes sense to design for a CoP. What are the problems, needs, goals, or opportunities that would call for an effort to develop or support a CoP? We hope that this discussion provides some useful responses to these questions and we look forward to learning about the efforts of others and how our experiences are useful to others.

Appendix: Guiding or Evaluative Criteria for Examining a Designed CoP

1. *A Common Practice and Shared Enterprise*
   - The group exhibits observable activities and interactions that reflect common practices or mutual enterprises.
   - Group members identify themselves as sharing common practices or mutual enterprises.
   - The group has produced artifacts that detail common practices or mutual enterprises.

2. *Opportunities for Interaction and Participation*
   - The context provides meaningful opportunities for social, that is, human-to-human, interaction in which newcomers and old-timers are in fact engaged.
   - The context provides opportunities for newcomers and old-timers to meaningfully participate.
   - The interaction and participation opportunities are structured in a way that directly refers to the common practice of the group.

3. *Mutual Interdependence*
   - The group includes members who have diverse expertise and knowledge.
   - Members depend on one another for participation, shared problem solving, and the completion of group tasks.
   - The group functions within a broader societal role that gives it, and the practices of the group members, meaning and purpose.

4. *Overlapping Histories, Practices, and Understandings among Members*
   - There are mechanisms for the development of new, socially agreed upon goals, practices, and understandings.
   - There is a core knowledge base that defines what practices and meanings are associated with the group.
   - Members of the group know each other or about each other, and about those contributions that other members have made.

5. *Mechanisms for Reproduction*
   - The group contains both newcomers and more experienced experts.
   - The group has a history that has continued beyond the completion of a particular problem or task.
   - The group passes through multiple cycles, with newcomers becoming old-timers.

6. *Respect for Diverse Perspectives and Minority Views*
   - The environment provides even and fair opportunities for members from different backgrounds to participate and to make contributions to the group practice.
   - Members show politeness toward diverse and minority perspectives in the group.
   - Members are satisfied that their individual perspectives have been fully understood and are respected.

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